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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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06/17/2005

Steven C Deane

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PHILIPS ELECTRONICS NORTH AMERICA CORPORATION
INTELLECTUAL PROPERTY & STANDARDS
370 W. TRIMBLE ROAD MS 91/MG
SAN JOSE, CA 95131

EXAMINER

RAINEY, ROBERT R

ART UNIT

PAPER NUMBER

2629

MAIL DATE

DELIVERY MODE

11/26/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/539,200	Applicant(s) DEANE, STEVEN C	
	Examiner Robert R. Rainey	Art Unit 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 June 2007 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 6-17-05
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Drawings

1. Figures 1-3 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

3. The abstract of the disclosure is objected to because of the use of the terms "means" and "comprising". Correction is required. See MPEP § 608.01(b).

Claim Objections

4. Claim 1 objected to because of the following informalities: The word "artifacts" is misspelled as "artefacts". Appropriate correction is required.
5. Claim 4 objected to because of the following informalities: The phrase "at the ends of the, or each, side of the array" seems to be an attempt simply to refer back to the phrase "at each end of one side of the display pixel array which side extends parallel to the rows of display pixels". But it can be interpreted as meaning either of two different arrangements, one that is "at the ends of the side of the array" and one that is "at the ends of each side of the array". Appropriate correction is required; perhaps something like: "between the measurement pixels, which are arranged at each end of one side of the display pixel array which side extends parallel to the rows of display pixels".

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. **Claims 1, 2, 4, 6 and 7** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,424,330 to *Johnson* ("*Johnson*") in view of U.S. Patent No. 6,771,027 to *Hansen* ("*Hansen*").

As to **claim 1**, *Johnson* discloses an active matrix display device comprising an array of pixels for producing a display output in response to drive voltages applied by drive circuit means, each pixel having a display element comprising electro-optical material between two electrodes and an associated switching device via which a drive voltage is applied to one electrode, the polarity of the voltage applied across the electrodes of each cell being periodically inverted, and correction means for providing a measurement indicative of a DC voltage level at the pixels and modifying voltages applied by the drive circuit means in accordance therewith so as to compensate for display artefacts (sic) caused by the DC voltage level (see for example column 1 line 1 to column 2 line 29), the correction means comprising a plurality of measurement pixels located outside the area of the array of pixels producing the display output (see for example column 4 lines 4-5), the plurality of measurement pixels being arranged separate from one to another at spaced locations along at least one side of the array and the correction means being arranged to provide a measurement from the measurement pixels (see for example column 4 lines 3-17, 25-37).

Johnson does not expressly disclose providing a measurement from each of the measurement pixels.

Hansen discloses a field emission display with test pixels in areas of interest to control the area of interest and in particular: providing a measurement from each of the measurement pixels (see for example column 5 lines 36-48, perhaps especially "test pixels can be included ... in the same column as other pixels").

Johnson and *Hansen* are analogous art because they are from the same field of endeavor, which is matrix type displays and further because they are attempting to solve the same problem, which is to maintain uniformity of the display in spite of inherent tendencies of the display toward non-uniformity.

At the time of invention, it would have been obvious to a person of ordinary skill in the art to modify the correction scheme of *Johnson* to monitor multiple pixels individually as taught by *Hansen*. The suggestion/motivation would have been to provide advantages such as to take advantage of the fact that pixels in a particular region experience similar changes to others in the region (see for example *Hansen* column 5 lines 36-48).

As to **claim 2**, in addition to the rejection of claim 1 over *Johnson* and *Hansen*, *Hansen* further discloses that the display pixels are arranged in a row and column array and that a measurement pixel is arranged at each end of one side of the display pixel array which side extends parallel to the rows of display pixels (see for example column 5 lines 36-48 noting that *Hansen* teaches a case

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in which each column includes its own measurement pixel, which would necessarily place a measurement pixel at each end of the pixel array).

Arguments for analogous art, obviousness and suggestion/motivation are the same as for the parent claim.

As to **claim 4**, in addition to the rejection of claim 2 over *Johnson* and *Hansen*, *Hansen* further discloses at least one further measurement pixel is arranged spaced between the measurement pixels at the ends of the, or each, side of the array (see for example column 5 lines 36-48).

Arguments for analogous art, obviousness and suggestion/motivation are the same as for the parent claim.

As to **claim 6**, in addition to the rejection of claim 1 over *Johnson* and *Hansen*, *Johnson* further discloses that each measurement pixel comprises a plurality of interconnected dummy pixels (see for example column 4 lines 3-5).

Arguments for analogous art, obviousness and suggestion/motivation are the same as for the parent claim.

As to **claim 7**, in addition to the rejection of claim 1 over *Johnson* and *Hansen*, *Johnson* further discloses that the display elements comprise liquid crystal display elements (see for example column 2 lines 53-67).

Arguments for analogous art, obviousness and suggestion/motivation are the same as for the parent claim.

8. **Claim 5** is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,424,330 to *Johnson* ("*Johnson*") in view of U.S. Patent No. 6,771,027 to *Hansen* ("*Hansen*") and further in view of U.S. Patent No. 7,209,102 to *Moon* ("*Moon*").

As to **claim 5**, in addition to the rejection of claim 1 over *Johnson* and *Hansen*:

Johnson and *Hansen* do not explicitly disclose varying the modification to the drive voltages for the display pixels in the direction of the one side according to a variation in the kickback voltages in that direction.

Moon discloses varying the modification to the drive voltages for the display pixels in the direction of the one side according to a variation in the kickback voltages in that direction (see for example Fig. 4, which shows adjustment zones spaced along the length of the rows, or column 6 lines 34-53).

Johnson, *Moon* and *Hansen* are analogous art because they are from the same field of endeavor, which is matrix type displays and further because they are attempting to solve the same problem, which is to maintain uniformity of the display in spite of inherent tendencies of the display toward non-uniformity.

At the time of invention, it would have been obvious to a person of ordinary skill in the art to modify the correction scheme of *Johnson* to account for

the variation along the length of the rows as suggested by *Moon* and to do this by acquiring information by monitoring multiple pixels individually as taught by *Hansen*. The suggestion/motivation would have been to provide advantages such as to account for the drastic position dependency especially in a row direction of the kickback voltage (see for example *Moon* column 2 lines 1-11) or to take advantage of the fact that pixels in a particular region experience similar changes to others in the region (see for example *Hansen* column 5 lines 36-48).

9. **Claim 3** is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,424,330 to *Johnson* ("*Johnson*") in view of U.S. Patent No. 6,771,027 to *Hansen* ("*Hansen*") and further in view of U.S. Patent No. 6,229,510 to *Kim et al.* ("*Kim*").

As to **claim 3**, in addition to the rejection of claim 2 over *Johnson* and *Hansen*, *Hansen* further discloses placing measurement pixels as necessary to allow them to respond to pixels in a region of interest (see for example column 5 lines 36-48, perhaps especially "a correspondence exists between test pixels and other pixels").

Johnson and *Hansen* do not expressly disclose that a measurement pixel is arranged also at each end of the side of the pixel array opposing the one side.

Kim discloses that the variation in kickback voltage occurs in a direction along the length of the columns as well as along the length of the rows (see for

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example Kim column 2 line 59 to column 3 line13, which teaches the difference between points close to and removed from the input terminal of the data voltage).

Johnson, *Hansen* and *Kim* are analogous art because they are from the same field of endeavor, which is matrix type displays and further because they are attempting to solve the same problem, which is to maintain uniformity of the display in spite of inherent tendencies of the display toward non-uniformity.

At the time of invention, it would have been obvious to a person of ordinary skill in the art to modify the correction scheme of *Johnson* to monitor multiple pixels individually as taught by *Hansen* and to account for the variation along the length of the columns as suggested by *Kim* by adding measurement pixels to the opposite side. The suggestion/motivation would have been to provide advantages such as to take advantage of the fact that pixels in a particular region experience similar changes to others in the region (see for example *Hansen* column 5 lines 36-48) or to compensate for the change in column voltage along the length of the column (see for example Kim column 2 line 59 to column 3 line13).

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent No. 5,428,370 to Knapp et al. is an early pixel monitoring patent.

U.S. Patent No. 5,841,411 to Francis teaches adjustment of data to compensate for anticipated cross-talk.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert R. Rainey whose telephone number is (571) 270-3313. The examiner can normally be reached on Monday through Friday 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amare Mengistu can be reached on (571) 272-7674. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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SUPERVISORY PATENT EXAMINER